

**TREASURY METHODOLOGY FOR ESTIMATING
TOTAL TAXABLE RESOURCES (TTR)**
Revised November 2002

The basis for Treasury's methodology for estimating Total Taxable Resources (TTR) is the theoretical TTR framework developed by Sawicky (1986) and the experimental estimates developed by Carnevale (1986). Both of these papers were part of the Congressionally mandated Treasury study on the fiscal relations between the Federal, State, and local governments. Under Public Law 102-321, the Department of Treasury is required to provide annual estimates of TTR. The estimates are used in the formulas to allocate Federal funds among the states for the Community Mental Health Services and the Substance Abuse Prevention and Treatment block grants.

An analysis of the Treasury methodology used from 1992 to 1997 to generate official estimates of TTR revealed inconsistencies with the original theoretical framework. As a result, a revised methodology was proposed by Compson and Navratil (1997) and reviewed by a panel of outside experts on fiscal capacity. There was a consensus among the reviewers that the revised methodology represents a substantial improvement over the original method.

The following discussion presents the basic details of Treasury's current methodology for generating official estimates of TTR which was adopted on September 30, 1998. Those interested in a more in-depth analysis of the methodology should see Compson and Navratil (1997) which is available on Economic Policy's web page (www.treas.gov/offices/economic-policy/index.html). A summary of the methodology used by Treasury from 1992 to 1997 to estimate TTR is also available on the web page.

Summary of TTR

As mentioned above, TTR is an outgrowth of the Congressionally mandated Treasury study on Federal, State, and local fiscal relations. Congress specifically requested that Treasury evaluate the various measures of the relative fiscal capacity of the states with particular concern about the ability of state personal income (SPI) to reflect accurately the relative ability of state and local governments to raise revenues to provide public services. It is widely recognized that SPI is an incomplete measure of a state's fiscal capacity because it does not include, and by definition is not intended to include, all of the potentially taxable income flows produced in a state.

Examples of potentially taxable flows not accounted for in SPI include corporate profits retained for investment purposes. These retained profits are not part of personal income by definition, but may be subject to tax through corporate income taxes. In addition, business income received by out-of-state residents (dividends for example) are not reflected in SPI at the location of the business, but may be subject to taxation through state business taxes. Finally, commuter income - income earned in one state by residents of another state - may be subject to taxation in the state where it is earned but is not included in that state's measure of personal income.

Gross State Product (GSP), which has also been suggested as a measure of fiscal capacity, suffers from the same basic handicap as SPI in that it is not comprehensive. GSP by definition does not include income earned by residents from out-of-state sources. Specifically, resident earnings (wages, salaries, proprietor's income, etc.) from out-of-state, and resident dividend and interest income earned from out-of-state sources are not included in GSP.

The potentially large taxable income flows that are not accounted for in SPI and GSP (only a conceptual idea at the time of the Treasury study) implies that both measures, by themselves could significantly understate the relative fiscal capacity of the states. TTR was designed to overcome the lack of completeness associated with SPI and GSP by accounting for the cross-border income flows that are not accounted for in GSP.

TTR is defined as the unduplicated sum of the income flows produced within a state (GSP) and the income flows received by its residents (SPI) which a state can potentially tax. The distinction between flows which a state can potentially tax and the actual fiscal choices made by states is critical. TTR says nothing about, nor does it consider, the actual fiscal choices made by the states. In sum, TTR is a flow concept, a comprehensive measure of all the income flows a state can potentially tax.

Estimating TTR

TTR is currently generated using the following formula:

$$TTR_s = GSP_s - (EMPLOYEE_s + EMPLOYER_s + FIBT_s + FCES_s) + (DIV_s + MINT_s + SIT_s + NCAP_s + COM_s)$$

where for states:

TTR_s = total taxable resources

GSP_s = gross state product

$EMPLOYEE_s$ = employee contributions to social insurance

$EMPLOYER_s$ = employer contributions to social insurance (unpublished data)

$FIBT_s$ = federal indirect business taxes (unpublished data)

$FCES_s$ = federal civilian enterprises surplus/deficit (unpublished data)

DIV_s = dividend income

$MINT_s$ = monetary interest

SIT_s = select social insurance transfers

$NCAP_s$ = net realized capital gains (parts of this series are unpublished data)

COM_s = commuter income, residents from outside state borders (unpublished data)

(see the discussion below about special treatment for the District of Columbia.)

The process of estimating TTR begins with in-state production, i.e. GSP, and subtracts components that are presumed not taxable by the states to derive modified GSP (MGSP). Various components of income that are derived from out-of-state sources are then added to MGSP to yield estimates for TTR.

Subtractions from GSP to Derive MGSP

The following components of GSP were deemed not available to the states to tax and hence, were subtracted from GSP:

(1) Federal Indirect Business Taxes:

Federal indirect business taxes (such as excise taxes on gasoline, alcohol, tobacco, etc.,) and nontax liabilities (grazing fees, miscellaneous rents and royalties, etc) are not part of TTR on the grounds that they are sums paid to the Federal government, and thus are not taxable by the states.

2) Employer and Employee contributions for Social Insurance:

The employer and employee portions of Federal social insurance contributions are viewed in a manner analogous to Federal indirect business taxes--as payments to the Federal government not available to the states for taxation. Specifically, these transfers include: old age, survivors, and disability payments, railroad retirement and disability payments, Federal civilian employee retirement payments, military retirement payments, state and local government employee retirement payments, worker's compensation payments (Federal and State), and other government disability insurance and retirement payments. It was not possible to separate out the contributions to state employee retirement plans.

(3) Federal civilian enterprise surpluses:

Although this is a relatively small item overall, it is larger in some states than in others. It consists of the surplus or deficit, net of subsidies, of federal government enterprises. These federal government enterprises include such large activities as the U.S. Postal Service, U.S. Department of Agriculture crop insurance programs, and several federal power authorities such as Bonneville and the Tennessee Valley Authority (TVA), as well as a number of smaller activities such as the operation of government canteens and the Government Printing Office (GPO). These federal government surpluses or deficits are removed from our measure of TTR because States cannot tax them.

The removal of these components from GSP yields MGSP.

Additions to MGSP to Derive TTR

MGSP does not account for all of the income flows that states could potentially tax. The following income flows are added to MGSP to derive TTR:

(1) dividends, and monetary interest income earned from sources outside the state

Dividend income consists of dividends received by individuals and nonprofit institutions and the dividends that are received, retained, and reinvested by fiduciaries. Monetary interest income consists of: reportable interest income; interest income from municipal bonds; interest received by nonprofit institutions; and, interest income retained by fiduciaries.

Ideally, only dividend and monetary interest income that was earned from sources outside of the state would be added to MGSP. However, the underlying data series from BEA does not distinguish this income by source. Given this, dividend and monetary interest income are added to GSP on the presumption that most of this income comes from out-of-state sources and is thus not accounted for in GSP. This implies some double counting of income flows to the extent that the dividends and interest do, in fact, stem from home state production. Compson and Navratil (1997) had originally intended to add rents and royalties under the same assumption. However, in generating their estimates for rents and royalties, BEA assumes that all rents and royalties are intrastate. As a result, the GSP and SPI estimates are identical and adding them to MGSP would be pure double counting.

(2) select transfers from the Federal government¹

These are transfers from select social insurance programs. Contributions to these programs are subtracted from GSP. Specifically, these transfers are: old age, survivors, and disability payments, railroad retirement and disability payments, worker's compensation payments (Federal and State), and other government disability insurance payments.

(3) Net realized capital gains

The net realized capital gains are added because they are not accounted for in GSP and they have an impact on the ability of a state's residents to pay taxes. The estimates come from Internal Revenue Service, Statistics of Income Bulletins.

(4) the earnings of state residents who work outside the state borders

Resident earnings from out-of-state employment (annual gross inflows) are added to MGSP on the grounds that these earnings are not accounted for in the resident's "home" state estimates of GSP. The BEA estimates for resident earnings from out-of-state employment include wage and salary income plus other labor income, less personal social insurance contributions. BEA estimates state level gross inflows and gross outflows to generate a net residence adjustment (gross inflows less gross outflows).

The complex tax circumstances in the District of Columbia require special adjustments in the TTR method. Since the District is proscribed by Federal law from taxing the earnings of commuters from outside its borders, we have also subtracted the earnings of non-residents. The adjustment for the

¹ When TTR was revised in 1998, the estimates for these transfers also included Federal civilian employee retirement benefits, military retirement payments, state and local government employee retirement payments, and other government retirement payments. Since the definitional changes to the NIPA's in 1999, these payments are no longer included in the transfer payments or in SPI since they are not considered part of current production. The Treasury is currently investigating the impact of these definitional changes on the estimates of TTR.

District of Columbia is equal to the net residence adjustment and results in a substantial reduction in the MGSP of the District of Columbia.

Data

With the exception of the net realized capital gains estimates, all of the data used to generate the estimates for TTR are provided by the Bureau of Economic Analysis (BEA). While much of the GSP and SPI data used to estimate TTR are publicly available, the following components are not published and thus, cannot be released: Federal indirect business taxes, Federal enterprises surplus/deficit, employer contributions to social insurance, monetary interest income, and the gross inflows and outflows. The net realized capital gains estimates are from the Internal Revenue Service, Statistics of Income Bulletins.

TTR estimates for a given year will only be made when both GSP and SPI data are available for that year. This contrasts with the original paradigm for estimating TTR which produced estimates for the latest year for which SPI data is available, even though GSP data for that year is not available. The primary reason for this change is that the new method uses GSP as a base, and adds to and subtracts from that base various components. Mixing different years of data for the various components would not be appropriate. As a result of using the same year data, the years estimated in September 1998 (for years 1994-1996) and September of 1997 (estimates were for 1994-1996) are the same.

Since Treasury began generating official estimates of TTR for use in the SAMHSA block grant programs in 1992, its standard policy regarding the underlying data to generate the estimates has been to use the latest estimates of GSP and SPI produced by BEA. The most recent estimates produced by BEA reflect the current state of knowledge regarding the measurement of income and production at the state level. This notwithstanding, it should be acknowledged that there are typically differences in the underlying data used to generate the most recent estimates of GSP and SPI.

The TTR estimates released on September 30, 2002 contained estimates for 1998 – 2000 and were generated using the GSP and SPI estimates released in 2002. GSP estimates released in June of 2002 contain new estimates for 2000 and revised estimates for 1998 and 1999. The estimates are consistent with the estimates of GDP by industry that were published in the November 2001 Survey of Current Business. The SPI estimates released in September 2002 contain revised estimates for 1999 through 2001. The revised estimates incorporate the annual revisions of the NIPAs that were released in August 2002 and more complete and detailed state source data than was previously available.

As a result, the SPI estimates for 1999 and 2000 are based on more recent NIPA estimates and state source data than the GSP estimates. Unfortunately, nothing can be done regarding the inconsistencies in the underlying data/information used to generate the GSP and SPI data series except to acknowledge them and make users of the TTR estimates aware of the limitations in the data. BEA has indicated that

for non-benchmark estimation cycles, the revisions to the state level estimates for GSP and SPI for the previous two years are typically small.

Comments on Methodology for Estimating TTR

In its efforts to generate the best possible estimates of TTR, Treasury encourages individuals with any comments or suggestions regarding methods for calculating TTR to send them to Michael Compson in the Office Of Economic Policy, U.S. Department of Treasury, 1500 Pennsylvania Avenue, NW, Washington, DC 20220 or to michael.compson@do.treas.gov.

Sources:

Carnevale, John, *Experimental Estimates of Total Taxable Resources, 1981-84*, in the Federal-State-Local Fiscal Relations: Technical Papers, Vol. 2, Office of State and Local Finance, Department of Treasury, September 1986.

Compson, Michael, and John Navratil, *An Improved Method for Estimating The Total Taxable Resources of the States*, Treasury Research Paper No. 9702, Office of the Assistant Secretary for Economic Policy, Department of Treasury, 1997.

Sawicky, Max, *The Total Taxable Resources Definition of State Revenue-Raising Ability*, in the Federal-State-Local Fiscal Relations: Technical Papers, Vol. 2, Office of State and Local Finance, Department of Treasury, September 1986.

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